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ABSTRACT

By using the Developmental Spelling Analysis, based on the spelling inventories developed at the University of Virginia, teachers can screen students for their present stages of word knowledge in an easy-to-administer format. The planning of developmentally appropriate activities for spelling instruction depends upon informed teachers who come to terms with the specific needs of a group of 20 to 30 students. Kim, Tiffany, and Ian were third graders when they were first administered the inventory. Kim was a prime candidate for the earliest word sort activity, the categorization of picture cards by sound. Tiffany was an advanced "within word pattern" speller. What she needed was time to study, examine, and talk about other orthographic patterns of long vowels. Based on the Developmental Spelling Analysis, Ian's teacher knew that she had to design instruction that extended his vowel study to two syllable words. Ian, Tiffany, and Kim were assessed weekly as well as periodically throughout the school year for their growth as spellers. Thoughtful teachers can, through assessment, pinpoint children's present theories about how words work and then design instruction using word sorts, word hunts, and other variations of word study that encourage children to achieve the highest levels of critical thinking. (Contains 17 references and three figures illustrating aspects of the Developmental Spelling Analysis technique.) (RS)

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Running Head: WORD SORT: AN ALTERNATIVE

Word Sort: An Alternative to Phonics, Spelling, and Vocabulary

Developmental spelling theory, now in its third decade of refinement, has elaborated the close connection between reading and spelling and the stage-like progression of advances that children make as they become readers and writers (Henderson & Beers, 1982; Henderson, 1990; Morris, 1989; Templeton & Bear, 1992). The theory describes developmental word knowledge as phonologically-based and directly related to experiences with reading that are appropriate (that is, instruction that is within the child's "zone of proximal development" [Vygotsky, 1978]).

Developmental spelling theory differs from more traditional approaches to spelling in two basic ways: 1) it prescribes a direct assessment of children's growth as spellers, relating their stage of word knowledge development to both reading and writing; and 2) it describes instruction called *word study* that facilitates students' thinking about written words and how they work. The key to instruction is assessment. Given knowledge of where children are in the developmental progression, teachers can design instructional activities which link children's *word study* directly to features of words which they are currently negotiating.

A specific type of *word study* has become known as *word sort* (Barnes, 1989; Bloodgood, 1992; Morris, 1982; Weber & Henderson, 1989). This strategy for examination of words calls for children to compare and contrast orthographic features which they are currently "using but confusing" in their spelling attempts (Invernizzi, Abouzeid, Gill, 1994). In *word study*, the teacher is not teaching specific words or spelling rules. Instead, by setting

up categories to compare and contrast, the teacher makes it possible for children to discover invariant aspects of the orthography for themselves.

The Developmental Stages of Word Knowledge. Emergent readers construct a concept of word along with their understandings about letter-sound associations in the Letter Name stage of spelling development. Children at this level typically spell by phonetic strategies: BOP for bump, NAT for net, one letter for each sound pronounced. Silent letters are not represented. As reading and writing become more consolidated, with more words recognized, young spellers move into the Within Word Pattern stage of spelling. At this point, they begin to become aware of the fact that there are more letters than sounds represented in spelling. The silent letters in open vowels become crucial to growth in literacy as they learn the patterns of long and short vowels. Typically, by third and fourth grade, the transitional reader will become more fluent, read more words, and move into the next stage of spelling, called Syllable Juncture. All the important aspects of long and short vowels become the base now for decisions about the spelling of two and three syllable words. The issue of consonant doubling, for example, is intricately tied to the question of open and closed syllables (hoping [open] versus hopping [closed]). (See Bear, Invernizzi and Templeton [in press] for a more complete discussion of the stages and word study activities for each).

The Developmental Spelling Assessment. The planning of developmentally appropriate activities for spelling instruction depends upon informed teachers who come to terms with the specific needs of a group of 20 to 30 students. This is no easy task. Word knowledge within a given classroom of children typically spans several grades as well as several stages of spelling development. The Developmental Spelling Analysis (Ganske 1994b), based on the

spelling inventories developed at the University of Virginia (Henderson, 1990; Schlagal, 1982, 1986), allows teachers to screen students for their present stage of word knowledge in an easy-to-administer format.

The Analysis is made up of two parts: the Screening Inventory and two different but parallel Feature Inventories. The Screening Inventory consists of 20 words spanning the stages of spelling development. Research has shown that the Screening Inventory's prediction accuracy is over 90% (Ganske, 1994a). The inventory yields a score which can, in turn, pinpoint the in-depth featural list to administer next.

The Feature Inventories are made up of separate lists of 25 words, one list for each stage. Each list includes five orthographic features that are characteristic of that stage of spelling development. Figure 1 shows a Class Record Sheet which lists the features for all stage lists. The numbers refer to the number of times each feature was spelled corectly. See Ganske, 1994b for detailed information regarding the Developmental Spelling Analysis.

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insert Figure 1 about here

By using this instrument, teachers can profile their whole class and be confident in designing word study instruction which addresses the features that need to be taught (as opposed to the traditional spelling instruction of whole-group with no regard to individual development). In Figure 1, Kim, Tiffany, and Ian were third graders when they were first administered the Developmental Spelling Analysis.

Picture Card Sorting. On the Screening Inventory, words are arranged in four groups of five, corresponding to the stages. Kim's inventory revealed

that none of the first 5 words (corresponding to the Letter Name stage) was spelled correctly. The teacher learned that Kim was attending to initial and final consonant sounds and she included medial short vowel substitutions:

rub	WOEPB
bet	BAT
slid	SED
chop	COP
coast	COST

Kim's teacher knew from the Screening Inventory and from the subsequently administered Letter-Name feature list exactly what activities to provide for Kim's growth. Kim was a prime candidate for the earliest *word sort* activity, the categorization of picture cards by sound.

For a beginning reader such as Kim, picture sorting drew her attention to the basic letter-sound associations that she was consolidating as she was building a sight vocabulary. These early letter-sound associations are the foundation of reading development. Kim needed to sort pictures of words by sounds: by alliteration (beginning consonants [/b/, /m/, /s/], rhyme (short vowel sounds), and consonant blends and digraphs (contrasting of words beginning with consonant blends with those beginning with a single consonant). Figure 2 illustrates a picture sort.

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insert Figure 2 about here

Picture sorting can be extended to the next level of sorting, *word sorting*, as children accrue a sight word vocabulary. When words banks increase, there are more and more written words which can be sorted in the same way pictures were sorted in the beginning. Work with rhyme can be

extended away from the traditional (and often overdone) "word family" study to include short vowel words with different spelling patterns (eg., cat, can, catch, clap--all short vowel "a" words, each with different rhyming environments). These can be contrasted with other short "e" words, for example. The principle to be remembered here is that the children must be able to read the words they are asked to sort.

Word Sorts. Tiffany, also a third grader when she was first administered the Developmental Spelling Analysis, spelled seven of the first ten words (Letter Name and Within Word Pattern) correctly before missing the entire third set (Syllable Juncture) of words on the Screening Inventory. A close look at the words Tiffany spelled revealed the spelling conventions she was "using but confusing", the signal to the teacher for what to teach:

hurt	HERT
fear	FEIR
coast	COSTE
quite	QUIT

Tiffany was an advanced Within Word Pattern speller. She had learned to spell many long vowel words (eg., glare, smoke, least, drive) and her spelling errors of other long vowel words indicated that she knew a variety of long vowel patterns (FEIR for fear, COSTE for coast). What she needed at this point in her word knowledge development was time to study, examine, and talk about other orthographic patterns of long vowels.

Word study activities during this stage are much like the activities for students in the Letter Name stage: students work with *known* words and they sort them into categories based on sound and pattern. Word study opens a bit more during this stage because there are so many more words that children can read; it is easier for teachers to design sorts containing words that they can

read. Tiffany's teacher designed word sorts consisting of approximately 20 words that she could read easily.

Tiffany and her group began by examining words that were spelled with a (long and short) and included different orthographic patterns. They were taught to sort all words into two columns by sound--those which were short and those that were long. The next step was to sort the long vowel words into spelling patterns (CVCe [name], CVVC [sail], CVC [hay]). This is called a *closed* sort--there are a given number of words with categories delineated by the directions. The teacher makes sure to include a "miscellaneous" category in the word sort. The "other" category will contain words the children are not sure about--and it is from this column that the teacher can find more clues to future instructional needs.

Later, the children can begin to observe patterns across vowels (for example, that time is the same CVCe pattern as game). Directions for the word sort activity can include the entry of the pattern sort into individual word study notebooks which allows the teacher to keep track of daily spelling activities (see Figure 3 for an example of the closed sort entered into a student's word study notebook)

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insert Figure 3 about here

As students become more proficient with teacher made sorts, they can begin to design their own word sorting activities, using blank word cards. Word sorts work as a buddy activity, students working together to complete an activity and, at other times, working toward automaticity by taking turns timing each other's word sorting. During the Within-Word Pattern stage,

children attend to the "vowel and what follows", looking at the patterns that arise from the spelling of single syllable English words (Invernizzi, 1992). The automaticity with which children recognize and sort single syllable words, both long and short, is the foundation necessary for later understanding of the doubling principle.

Word Hunts and Writing Sorts. Ian as a third grader was able to spell 9 of the first 10 words plus one additional word in the third set of the Developmental Spelling Analysis Screening Inventory. Ian was exactly on the border between being a Within Word Pattern speller and a Syllable Juncture speller. His feature spellings looked like this:

complaint	COMPLANTE
termite	TURMITE
piling	PILEING
clapped	CLAPED
baggage	BAGGEG
furnace	FURNICE

His teacher judged that Ian was experiencing doubling confusion and trouble with the long vowel and r-controlled pattern in the stressed syllable. He was also having trouble with the unstressed syllable spelling of baggage and furnace. These are examples of the kinds of errors children make when the vowel patterns in one-syllable words are not quite firm. These patterns become even more complicated with two syllable words in which structural issues are confounded by stress.

Ian's teacher knew that she had to design instruction that extended his vowel study to two syllable words. She needed to continue his focus on doubling and e-drop issues while beginning to challenge him to think about stress and its role in English spelling. Finally, she knew that Syllable Juncture spellers need time to turn their attention to the meaning tier of English spelling, beginning with prefixes and suffixes. Word hunts and

writing sorts, variations of word sorting, are both activities which help children consolidate word identities.

The "word hunt" activity encourages children to reconnect word categorizations back to text by calling on them to find exemplars of patterns they are currently studying in text they have already read. Ian and his group were comparing and contrasting two syllable words by their stress pattern. As with earlier stages, the first sort is based on common features: sort two syllable words (eg., entire, annoy, accent, absent) into two columns representing the VCCV and doublet patterns. The second step is to sort the words further by dividing the two columns into stress patterns:

VCCV		Doublet	
1st Syllable	2nd Syllable	1st Syllable	2nd Syllable
enter	entire	accent	annoy
absent	dismiss	shabby	attach

This activity represents a level of study that is fairly intense. The children are required to hold a word they can read under close scrutiny, mixing the issues of pattern and stress. Ian's teacher introduced the activity with care; the children were given their own word cards to sort and define in their word study notebooks. Then they were asked to find other examples of words in the texts they had read that fit the categories they were studying. Much discussion ensued before they decided whether a word was appropriate to add to their word study notebooks. The words became a basis for vocabulary study. For example, the difference in stress in the words "con'duct" and "con duct'" sparked a new interest in the role of grammar in determining word meaning. The teacher was able to help her students refine and extend their understandings without the use of commercially printed word

lists. Instead, the words Ian was studying came from meaningful texts and were connected in his "lexicon" with aspects of the orthography he was currently negotiating.

Ian, Tiffany and Kim are assessed weekly as well as periodically throughout the school year for their growth as spellers. The Developmental Spelling Analysis provides record forms and alternate lists to help with the periodic assessment and documentation. For weekly documentation, the writing sort becomes an assessment vehicle the teacher uses to assure herself that the children's instruction is not haphazard. Writing sorts have already been described as instructional tools earlier; word patterns sorted on cards can be frozen in time in the written sort in each child's word study notebook.

But the writing sort can also be used for assessment. The teacher calls out the week's words to groups in her class, directing the students to spell the words, not in list form, but in the same spelling categories they have been sorting all week. This activity, known as the blind sort, acknowledges not only the learning that has taken place, but places value on the thinking skills involved in categorizing words by orthographic features.

Conclusion. Memory researchers advise that behavior that occurs without consciously controlled attention is not as reliably retrieved or consciously controlled as are behaviors that are intentionally learned (Naslund and Samuels, 1992, p. 150). It would seem to behoove teachers to use everything in our power to call children's attention to words, especially those aspects about words that reflect children's developmental knowledge of the orthography and that reconnect to meaningful text. Word sorts present instructional opportunities for both types of activities. Children study words they can read taken from text they are reading. In the process of the study, the

automaticity and accuracy of reading response becomes one and the same with the reader.

Developmental spelling theory provides a powerful resource to the practitioner in process oriented classrooms and an alternative to lock-step group spelling instruction. Spelling instruction does not have to be thrown out because of reading workshop nor does it have to be dreaded as skill and drill. Rather, thoughtful teachers can, through assessment, pinpoint children's present theories about how words work and then design instruction using word sorts, word hunts, and other variations of word study that encourage children to achieve the highest levels of critical thinking.

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Figure Captions

Figure 1. The Developmental Spelling Analyis Class Record Sheet

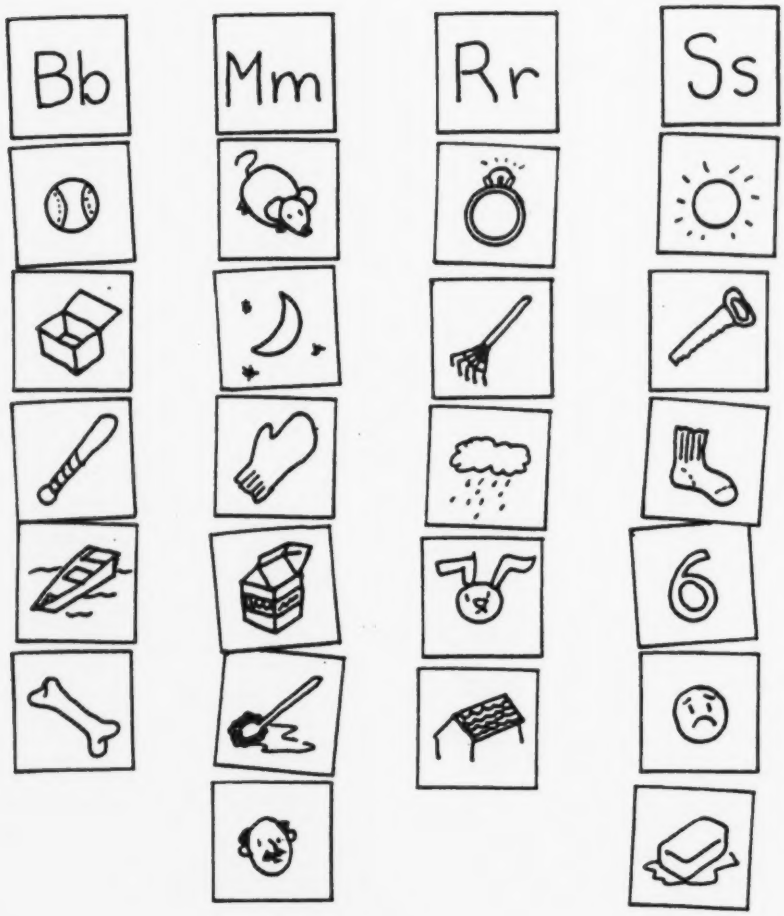
Figure 2. An Example of a Picture Sort.

Figure 3. A Page from a Word Study Notebook

DSPA
Class Record

		LN STAGE						WW STAGE						SJ STAGE							DC STAGE							TOTAL INVENTORY SCORE
		A Initial & Final Single Consonants	B Initial Consonant Blends & Digraphs	C Short Vowels	D Affricate Sounds	E Final Consonant Blends & Digraphs	STAGE SCORE	F Long Vowels: V-Consonant-E	G R-Controlled Vowel Patterns	H Other Common Long Vowels	I Complex Consonants Units (ss, qu, ck)	J Ambiguous Vowels: Digraphs/Diphthongs	STAGE SCORE	K Doubling & E-Drop with "ed" & "ing"	L Other Syllable Juncture Doubling	M Long Vowel Patterns (Stressed Syllable)	N R-Controlled Patterns (Stressed Syllable)	O Unstressed Syllable Vowel Patterns	STAGE SCORE	P Silent/Sounded Consonants	Q Consonant Changes	R Vowel Changes	S Latin-Derived Suffixes	T Assimilated Prefixes	STAGE SCORE	
Kim	Spring 3rd	4	1	1	2	2	2						0						0						0		2
	Fall 5th	5	4	3	4	4	17						2						0						0		19
	Spring 5th						25	4	3	2	2	0	9						0						0		34
Tiffany	Spring 3rd						24	4	3	3	2	1	12						4						0		40
	Fall 5th						25	5	5	4	3	3	19						9						0		53
	Spring 5th						25						24	4	3	5	4	4	18						6		73
Ian	Spring 3rd						24						23	3	3	4	4	3	15						3		65
	Fall 5th						25						25	5	4	5	5	5	22	2	3	2	2	0	8		80
	Spring 5th						25						25						24	4	5	4	3	3	18		92

CVV	CVVC	CVCe	CV
May	nail	cake	ha
bray	fail	tape	hi
clay	tail	make	fly
Kay		bake	cry
Jax		rake	by
say		brave	
play		slave	
		save	
tie		David*	
die		Dave	
dye		pave	
buy		rave	
		grave	
		take	
		tale	
		side	Crazy
		ride	Ja Ja
		bite	David
		Mike	ape
		kite	ate
		glide	Bible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